

# Grain entrapment numbers on the rise. Yet many cases go unreported

Many farmers know someone who has been trapped in grain – perhaps even a situation where an engulfment resulted in the death of a farmer, worker or family member. The stories are not uncommon – yet many cases go unreported.

“At 22 grower meetings I went to across Indiana, we picked up four cases of farmers who rescued other farmers, but kept it quiet. They didn’t want their wives to get upset,” said Bill Field of Purdue University’s Agricultural Safety and Health Program. “People are reluctant to report many cases. They are embarrassed, or if they are in a commercial setting they don’t want their site’s safety record tarnished.”

Field, who has been tracking cases of grain engulfment and entrapment since the late 1970s, is a leading national expert in the dangers of flowing grain and other hazards relating to grain movement and storage. He’s tracked more than 800 cases total but does not consider the database to be comprehensive, simply because many cases are not reported and it was more difficult to obtain national information before the Internet made searching easier.

On average, 70 percent of cases happen on-farm, while 30 percent occur in commercial settings. Half of all cases typically result in death.

Nationally through November 2010, 52 cases were reported, with 35 of those happening on-farm. Cases of both types of incidents – on-farm and commercial – occurred in Nebraska.

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[www.NebraskaCorn.org](http://www.NebraskaCorn.org)



# Types of Engulfment

**Flowing grain** Can occur when emptying a bin.

**Collapse of horizontally crusted grain** When someone stands on the crust either unknowingly or knowingly trying to break it. It's like a bridge collapsing.

**Collapse of vertically crusted grain** An avalanche of grain falls off the side of a bin onto someone trying to break it up or clean the bin. People can suffocate with only 12 inches of grain covering them because that's equivalent to nearly 50 pounds per cubic foot and can prevent movement.

**Grain transportation vehicles** Wagons and trucks pose hazards either when filling or emptying.

**Grain vacuum machines** Placing the suctioning hose at your feet while standing on grain quickly draws a person down into the grain.



▲  
*The National Corn Growers Association debuted a video on grain bin engulfment and prevention in January. It's a straightforward picture of what can happen – and the emotional struggle families must face after the loss of a loved one in a grain bin accident. Produced in partnership with the National Grain and Feed Association, the video will be shared at various meetings over the coming year. It includes interviews with experts who train firefighters across the country to rescue engulfment victims and shines a light on how difficult a rescue job can be.*

*Shown here is a firefighter in Illinois practicing cutting away steel from a bin as part of rescue training conducted for the video.*

*continued from page 1*

"It's the highest number of incidents we've ever recorded, and I've been doing this since 1978," he said.

Higher numbers late in 2009 and in 2010, unfortunately, were not surprising simply because the 2009 crop was of lower quality. Lower quality grain leads to more incidents because farmers need to enter bins more often to get grain flowing or clean out lodged grain.

The upward trend in entrapments also follows an increase in grain being stored on farms – on-farm grain storage capacity increased 2 percent in 2010 (to 12.5 billion bushels), 2 percent in 2009, 2 percent in 2008 and 4 percent in 2007. In fact, since 1999, on-farm grain storage capacity has increased 1.4 billion bushels nationwide. In Nebraska, on-farm storage increased 100 million bushels since 1999 to 1.1 billion in 2010.

Field said commercial operations must follow OSHA standards – but that farming operations are exempt. That generally leads to a difference in safety equipment installed on bins and a relaxation of rules regarding training and more. "However, big farms that employ more than ten people may have a different set of safety standards to keep in mind in the future, and also note that there are restrictions for those under age 16, too," Field said.

More information on employing young people who may face hazardous situations can be found at [www.agsafety4youth.info](http://www.agsafety4youth.info).

## BARGAIN BIN?

From time to time, smaller commercial grain storage operations come up for sale – and farmers buy them, with some farmers having 500,000 to 1 million or more bushels of storage capacity as part of their operation.

While Field said there may be some advantages for farmers to run such large systems, they are still considered on-farm and not commercial storage facilities unless they become licensed to buy and sell grain. They are exempt from OSHA standards if they remain classified as a farm operation – although that could change in the future.

"Sometimes there's a reason why a retired commercial operation goes up for sale," Field said. "It is costly to bring an old facility up to standards, so commercial operators close them or sell them to farmers. Farmers should think twice about buying, especially since higher safety standards may eventually be adopted for farmers who employ a larger number of people."

Commercial operators are under more pressure to ensure worker safety – penalties in some cases have reached millions of dollars and operators could be charged with criminal negligence under OSHA rules. In Nebraska, the Omaha area OSHA office announced in 2010 that it was conducting a local emphasis program on grain elevators with plans to inspect every commercial operation.

# Respond to an Engulfment

The response to complete and partial engulfments are a bit different – yet they share some common points, including:

- Shut down and lock out all equipment.
- Call 911.
- Do not enter the scene until trained first-response personnel arrive.
- If the bin has an aeration blower, turn it on to increase air flow and help the entrapped person breathe.
- Assemble equipment, including front-end loaders, shovels, plywood for coffer dams and portable augers.

**Note:** If you become trapped, stay near the outer wall and keep moving. If necessary, walk until the bin is empty or the flow stops.

Because grain applies so much pressure – an additional 160 pounds of "weight" are added when just your legs are buried – it is important to use a grain retaining device to free a partially engulfed person. Without this, the person being rescued could be further injured.

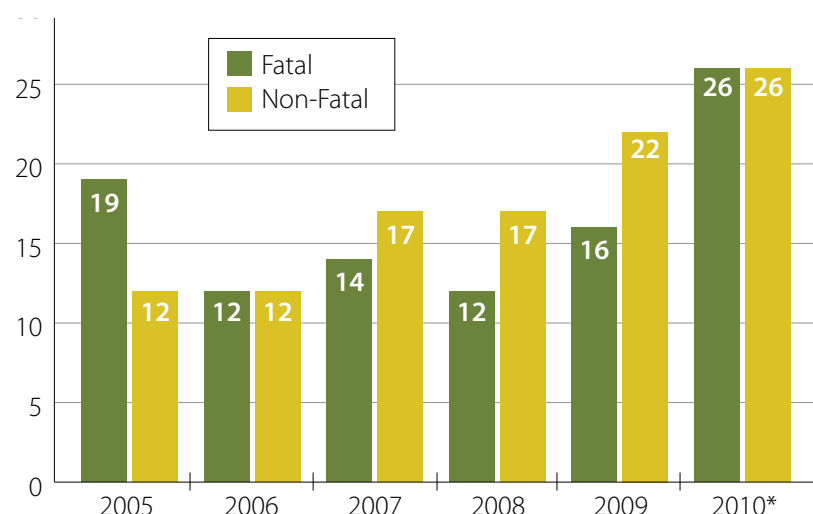
# Contributing Engulfment Factors

The number-one identified cause of entrapment is out of condition grain, which explains why 2010 saw a significant increase in entrapments.

Here's the top contributing factors as identified by Purdue University:

- Out of condition grain
- High capacity grain handling systems
- Working alone
- Relaxed compliance with safety regulations
- Lack of knowledge concerning risk


## U.S. GRAIN ENTRAPMENTS




\*2010 figure is through November 2010 only.

Source: Purdue University

### No one has to die




**Most grain bin accidents occur when grain is being unloaded**



**40% of accidents involve grain out of condition**

- **Educate** workers about hazards
- If entering a bin, **shut off power**
- Use a **safety harness** and **life line**
- Work in pairs



(402) 476-6174

▲ The Nebraska Grain and Feed Association (NGF) has placed additional emphasis on preventing engulfment incidents across the grain handling industry, including on-farm. Originally designed and made available by the Grain and Feed Association of Illinois and reprinted with their permission, NGF is making 12 x 18 color safety posters and 8.5 x 11 self-adhesive stickers that can be attached to grain bins available to its members and farmers in Nebraska. The posters are available for \$10 and the stickers are available for \$1.50 each or \$1.20 each if ordered in quantities of 10 or more. Contact NGF at 402-476-6174 for more information.



By Alan Tiemann, Chairman

The Corn Resources Act passed in 1978, which created the corn checkoff and the Nebraska Corn Board, was an important point in the history of corn production and agriculture in Nebraska.

Thanks to the Act, farmers were able to invest a tenth of a cent (\$0.001) of every bushel of corn sold back into research, market development, promotion and education. In the mid 1980s, the checkoff rate changed to a fifteenth of a cent (\$0.0015) per bushel before increasing in the late '80s to a quarter of a cent (\$0.0025), a rate that has remained constant ever since.

While Nebraska ranks third in corn production, which represents a \$7 billion industry in the state, the checkoff rate is the lowest among the top ten corn producing states in the country.

Yet activities the checkoff are asked to support and participate in continue to grow. We have been and continue to be successful on many fronts, but more needs to be done.

We need to support research at the University of Nebraska. We need to support the livestock and ethanol industries – two economically significant and intertwined sectors vital to the state. We need to step up communications efforts that defend the production practices of corn farmers and livestock producers across Nebraska and explain what farmers do and why. These initiatives are critical should activist groups try to drive through senseless changes that would put Nebraska livestock producers and agriculture at risk.

We need to participate more fully on a national level with the National Corn Growers Association (NCGA) to ensure our voices are heard in Washington, D.C., and elsewhere. We need to continue taking leadership roles within NCGA as well as with the U.S. Meat Export Federation and U.S. Grains Council. Those connections and efforts promote agriculture goods from Nebraska around the world and add a tremendous value to our economy.

Recognizing all of this, we are happy to work with the Nebraska Corn Growers Association (NeCGA) to examine options and alternatives for the corn checkoff. It was NeCGA that got the initial checkoff started back in 1978 and it is appropriate they are actively engaged in where the checkoff should go in the future.

Additionally, as a farmer who invests in the corn checkoff, your opinion is important. Let a Nebraska Corn Board member know your thoughts by dropping us an email or giving us a call.

FieldNotes

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commonground™

helps women have farming,

It's no secret that more Americans than ever are disconnected from farming and where their food comes from. This lack of understanding about modern agriculture and food production is further hampered by those who spread misinformation and mislead consumers in an attempt to put one type of food or farming ahead of another.

While the Nebraska Corn Board has worked within the state with its Sustaining Innovation campaign and within Washington, D.C., with the Corn Farmers Coalition, it is partnering with the Nebraska Soybean Board on a new initiative led by farmers that takes the truth about farming and food production to a crucial audience: women.

Known as CommonGround, this program aims to provide women, especially moms who may not have a tie to agriculture, with an on-farm connection via women who share their values and concerns.

The program, coordinated by the United Soybean Board and National Corn Growers Association, is initially being launched in Nebraska and four other states. Three farm women from each state have been selected to be key spokeswomen within the state and on a national level. Each volunteer will actively share her enthusiasm and passion for agriculture with consumers, the media and other influencers. In turn, they will work with more women who will focus on responding to local and state media requests and communicate their own personal story via social and other media.

Every woman who works with her family to run a farm and raise a family has a personal perspective on modern farming that is far more powerful than any research or statistic on agriculture. This perspective and knowledge is often missing in discussions about food and agriculture – and sharing it woman-to-woman will help build trust.

In Nebraska, Shana Beattie of Sumner, Dawn Caldwell of Edgar and Kristen Eggerling of Martell are the three initial spokeswomen. More women have the opportunity to become involved, and media trainings will be held in the state with them and these three spokeswomen. To be considered, women can contact Kelsey Pope of the Nebraska Corn Board. For more, including a link to the CommonGround Facebook page, go to [www.FindOurCommonGround.com](http://www.FindOurCommonGround.com).

### CommonGround's core message:

*American Farmers  
provide our country  
with the safest, most  
affordable, healthy  
and abundant food  
supply in the world.*

## Shana Beattie



## Dawn Caldwell



## Kristen Eggerling





# food conversations with others

"With active kids and the farm, time is a precious commodity. Yet I'm passionate about agriculture and want other women to understand that I'm just like them, that I buy the same things they do and want healthy and safe food," said Shana Beattie, a family farmer from Sumner. "I'm looking forward to sharing my story with other women who are in the same place as me, who are working their tails off and hoping for an extra five minutes in the day."

Shana is a full-time mom to McKenzie (10), Mattie Virginia (7), Barton Jr. (5) and Preston (3). She, her husband Bart and Bart's parents own and operate a diversified farm, raising corn, soybeans, alfalfa and certified grass seed, in addition to operating a cow/calf ranch and wean-to-finish swine operation.

"We work hard with the land God provided us and do the best we can for our family and children, who will be the sixth generation on our farm," Beattie said.

Shana was born and raised in north central Florida where her family was in the commercial cattle business and she was active in 4-H and FFA. She obtained a Bachelor of Science degree in Animal Science from the University of Florida.

Dawn Caldwell and her husband Matt live near Edgar and run a diversified farm in north central Kansas that was passed down from Matt's grandfather. They and their children – Kaydee (15) and Emmet (13) – raise crops on half their farm and utilize pasture on the other half to raise cattle. They raise their own cows and run the crop side of the operation with Matt's brother, and Kaydee and Emmet are deeply involved in the cattle side of the farm – even taking out a loan to start their own herd of registered cattle.

"It's really important that today's consumers put a face with their food," Dawn said. "The women working with CommonGround can be that face, we can give that sense of security and woman-to-woman confidence for what they are doing for their family because it's the same thing that we're doing for our families."

Dawn also works for the Aurora Cooperative as communications manager and was recently elected to serve on the Nebraska Beef Council. Growing up, Dawn was in 4-H, attended the University of Nebraska-Lincoln where she obtained a degree in Animal Science and worked for the University of Nebraska Extension Service and an independent feed company before moving to the Aurora Cooperative in 2000. She is a member of the Nebraska LEAD Program, Class XXIV.

"Every decision we make on the farm is well thought out. Our first concern is for the land because it allows us to do our jobs," said Kristen Eggerling, a family farmer from Martell. "When we make decisions, we're making decisions for our own family, too, not just those who buy our products. We eat the same foods and drink the same water as every one else."

Kristen, her husband Todd and her parents farm and ranch on the land that was homesteaded by Kristen's family in 1873 – 138 years ago. Before a partnership with Kristen's parents allowed her and Todd to become more deeply involved in the farm, Kristen taught sixth grade in Lincoln. She and Todd have two children, Barrett (5) and Lauren (2).

"When I taught I did something on agriculture and farming every year, explaining to students in social studies the activities on the farm over a course of a year," Kristen said. "Since leaving teaching, I've continued to be involved in communicating agriculture's story to consumers. It's important to us to share that knowledge and experience."

Crops on the Eggerling farm have been 100 percent no-till since the early 1980s, and rangeland is cared for through prescribed burning, early season flash grazing and rotational grazing.



## Kimberly Clark joins Nebraska Corn Board staff

Kimberly Clark has joined the Nebraska Corn Board staff as ag program manager to coordinate ethanol programming, a position that will allow her to coordinate the board's efforts to increase in-state demand for ethanol, improve and expand the infrastructure of blender pumps and ethanol movement within and outside Nebraska.

She will also maintain a working relationship with ethanol development staff in other corn-producing states, the National Corn Growers Association, ethanol industry groups and Nebraska's ethanol plants in order to monitor federal legislation that impacts the development and use of all biofuels.

At the same time, Clark will work with consumers, media, schools and the general public to provide sound, factual information regarding ethanol development, production and use.

"The ethanol industry is critical to Nebraska and Nebraska corn farmers, so having Kimberly on staff to coordinate our ethanol programs is significant," said Don Hutchens, executive director of the Nebraska Corn Board. "Kimberly's background and experience will help continue the success we've seen with ethanol, and her ability to connect with and educate consumers about ethanol will be a tremendous asset."

Clark, a Leigh, Neb., native, was previously employed with the University of Nebraska-Lincoln as the research project coordinator in dairy-related research projects. She received a master's of science degree in Animal Science and Agriculture Leadership from the University of Nebraska-Lincoln, where she also received her bachelor's of science degree in Animal Science.





# Assessment a component of IRM plan



The Environmental Protection Agency has re-registered *Bt* crops and as part of the process, it encouraged technology providers to further strive to ensure appropriate refuges are maintained as part of an insect resistance management (IRM) program. If a proper refuge is not maintained, there is a concern that insects would become resistant to *Bt*, making the technology less useful to farmers.

In the past, companies did their own monitoring, and sometimes contracted with organizations like the Association of Official Seed Certifying Agencies (AOSCA) to assess randomly selected customers to monitor IRM compliance rates. This year, however, tech providers came together to contract with AOSCA on a national level and make the program completely independent from the seed companies.

Steve Knox, secretary-manager of the Nebraska Crop Improvement Association, an AOSCA affiliate, said tech providers will provide customer lists to AOSCA, who will then provide names to state affiliates. The Nebraska Crop Improvement Association will handle the assessment in Nebraska, with letters going out to growers beginning in June and phone calls to schedule appointments after that.

"The assessment, which must be completed in person, typically takes 10 to 20 minutes and is pretty simple," Knox said. "We just ask about total acres, how much were planted and how many acres were left in a refuge for each *Bt* product."

Knox said the assessment does not require a more detailed look or ask farmers to open their books for closer examination. "It's a pretty quick and simple process once we get to the farm," he said. "We do appreciate farmers who are flexible so we can fit their farm into a schedule that helps save travel time for our assessors."

Technology use agreements farmers sign with seed companies require them to meet IRM refuge requirements. It also requires farmers to provide information on their refuge when asked as part of the compliance program. If a farmer selected to be part of the compliance program is found to be out of compliance, they'll be given information to help get into compliance going forward and be re-assessed the following year.

Considering the number of refuge options for *Bt* crops – different refuge requirements for different traits, refuge in a bag programs and more – it is more challenging than ever to map out an IRM strategy. An IRM refuge calculator put together by the National Corn Growers Association in partnership with all major tech providers can help.



*Corn farmers who utilize Bt crops may be asked to be a part of an IRM assessment, which is conducted by an independent organization to monitor compliance with refuge requirements. An annual assessment is required by the EPA.*





## A REFUGE CALCULATOR

To assist farmers in meeting refuge requirements, the National Corn Growers Association partnered with the major seed technology providers to develop an IRM refuge calculator, which can be downloaded at [www.irmcalculator.com](http://www.irmcalculator.com).

Mike Geske, a farmer from Missouri who is on the NCGA Corn Board, said the array of new technologies available to farmers is accompanied by a broad, complex variety of refuge requirements.

"What I find so exciting about the IRM refuge calculator is that it makes short and easy work of what has become a complex process," said Geske, who is liaison to NCGA's trade policy and biotechnology action team. "I see this tool as universally beneficial in that it provides growers already familiar with their own particular refuge requirements with an extra level of confidence and reassurance, while clarifying options for those less familiar and allowing them to be the best stewards of their land."



"The calculator is great," Knox said. "It allows farmers to go in, do the calculations automatically and print them out. IRM assessments will take less time for farmers who used the calculator, followed the plan and have a printout of what they did."



Vision and leadership are two of the most admired attributes I can think of and two that had a big influence on 32 years of the Nebraska Corn Checkoff Program. Whenever a new year begins it allows us to take a look back of what has transpired, which then challenges us to try and get up to the 30,000 foot level to see what lies ahead.

As I look at the past in the world of corn, I see visionary leaders who saw a need for corn farmers to take a more active role in influencing their future. Corn was scarcely \$2 a bushel, carryover stocks hovered around 4 billion bushels and survival was built on the need for government programs including set-aside and three year storage payments. Total production was around 6 billion to 7 billion bushels.

How did things come to change for corn producers? What was the vision of grassroots leaders? What made the difference to where now we see the most stable part of the U.S. and Midwest economy being built on the back of agriculture?

Don't for a second discount the role checkoff investments have played in this – and not just for corn, but all commodities. The vision and leadership from corn producers like Allen Kreuzscher, Bob Bettger, Floyd Walhgren and many more, and legislators like Sen. Loren Schmit and Richard Maresh all teamed up to recognize something had to change. Farm organizations recognized it would take some degree of government support and that a process of getting value from the marketplace versus the government would provide a better foundation. But it was the willingness of farmers to self impose a checkoff (financial assessment on a per bushel basis) to promote their industry, develop new markets, conduct research on new and better uses, educate consumers, policymakers and producers alike on the sheer versatility and value of corn and other commodities.

Nebraska corn farmers have invested a cumulative total of 6.7 cents per bushel over the 32 years to finance a self help program that has helped bring increased production (13.4 billion bushels), lower carryover

*By Don Hutchens, Executive Director*

(1 billion bushels), higher values (\$3-5 per bushel), new uses (ethanol use is 3.6 billion bushels), biotechnology, biodegradable plastics and hundreds of others.

Today, Nebraska corn production has a market value of more than \$7 billion – not to mention what it is worth once it's transformed into fuel, food, meat and industrial uses. Compare that to just a little more than \$1 billion in 1978 when our checkoff act was created.

One only has to look at the way speculators and fund investors look at agricultural markets today to see that the world has opened its eyes to the value of what agriculture possesses. The market price of corn now swings wildly in the wind, impacted by weather on other continents, value of currencies, the price of oil and home mortgages. The penny checkoff that most corn states collect today (Nebraska the lowest in the nation at just a 1/4 cent per bushel) pales in comparison to the one day or even one hour movement of the market. But the importance of the checkoff at a time of world competition for market share, pressure on animal agriculture and a host of proposed environmental regulations cannot be underestimated.

Farmers and ranchers are left with little else in their arsenal to defend their way of life and the development of markets here and around the world — with budget cuts across states and in the federal government, the checkoff programs may be the last investment dollars on the table to keep agriculture as the "backbone." Now more than ever it takes great leadership with vision to chart out the role of checkoff investments and the role farmers and ranchers have in managing their own investments into the future.

I would hate to imagine where the state or U.S. economy would be today without the production and economic strength of ag commodities and the vision and leadership that has financed the work of market development, research, education and promotion.

From the Corner Office



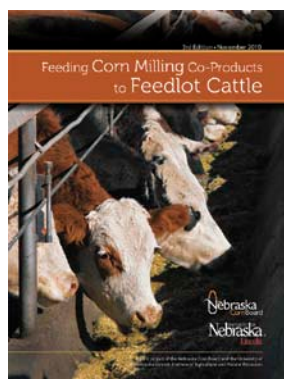
## Video promotes Nebraska cattle feeding

The Nebraska Department of Agriculture and Nebraska Corn Board have released a video that features opportunities available for feeding cattle in Nebraska. The six minute video, "Consider the Possibilities – Cattle, Corn and Co-Products," is a great way for cow-calf producers nationwide to get an up close view of the cattle feeding industry in Nebraska, said Greg Ibach, director of the Nebraska Department of Agriculture. He noted that Nebraska has more than 5,000 feedyards willing to work with cow-calf producers interested in retaining ownership or partnering on their feeder cattle.

To view the video, go to [www.NebraskaCorn.org](http://www.NebraskaCorn.org) and click on the "Feeding Cattle in Nebraska" icon.

## Corn co-products manuals available

To continue advancing the understanding of feeding distillers grains, the Nebraska Corn Board and University of Nebraska have published a new corn co-products publication for forage-fed cattle and updated the popular beef cattle publication.



The new, 24-page "Feeding Corn Milling Co-Products to Forage Fed Cattle" includes research that shows forage fed cattle often perform better when corn products like distillers grains are made available, especially during the winter months. Authors for the publication include Aaron Stalker, Rick Rasby, Galen Erickson, Crystal Buckner and Terry Klopfenstein of the University of Nebraska.

A 36-page third edition of "Feeding Corn Milling Co-Products to Feedlot Cattle" offers significant updates since it was last published in 2007. This popular publication provides feedlot operators, animal nutritionists and others with the latest research and sound recommendations on feeding corn co-products like distillers

grains to beef cattle. Authors include Galen Erickson, Crystal Buckner and Terry Klopfenstein of the Department of Animal Science at the University of Nebraska.

Both publications are available at [www.NebraskaCorn.org](http://www.NebraskaCorn.org) under the publications section or at the university's [beef.unl.edu](http://beef.unl.edu) website. Printed copies are also available.

## Nebraska supports partnership with NASCAR®



Nebraska corn farmers through the Nebraska Corn Board are among the organizations backing American Ethanol, a partnership formed by the ethanol industry, corn growers across the country and NASCAR.

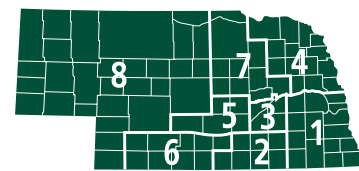
The partnership comes after NASCAR said last fall it would take its environmental commitment to the next level by fueling all races in its three national racing series with Sunoco Green E15, a 15 percent corn ethanol blend, beginning with the Daytona 500 in February. NASCAR is one of the most effective marketing and advertising organizations in the world, and partnering with it will raise the visibility of ethanol and allow the ethanol industry and farmers to communicate to new and larger audiences in exciting ways.

American Ethanol was formed by Growth Energy with support from the National Corn Growers Association, who in turn drew support from corn organizations across the country, including Nebraska.



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NebraskaCorn.blogspot.com  
[www.NebraskaCorn.org](http://www.NebraskaCorn.org)

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Nebraska Corn Board members represent the eight districts indicated on the map and are appointed by the Governor. One at-large member is elected by the other Board members.



**District 1**  
**Dave Nielsen**  
Lincoln, NE



**District 2**  
**Mark Jagels**  
Davenport, NE



**District 3**  
**Curtis Friesen**  
Henderson, NE



**District 4**  
**Bob Dickey**  
Laurel, NE



**District 5**  
**Tim Scheer**  
St. Paul, NE



**District 6**  
**Dennis Gengenbach**  
Smithfield, NE



**District 7**  
**David Merrell**  
St. Edward, NE



**District 8**  
**Jon Holzfaster**  
Paxton, NE



**At-large**  
**Alan Tiemann**  
Seward, NE